1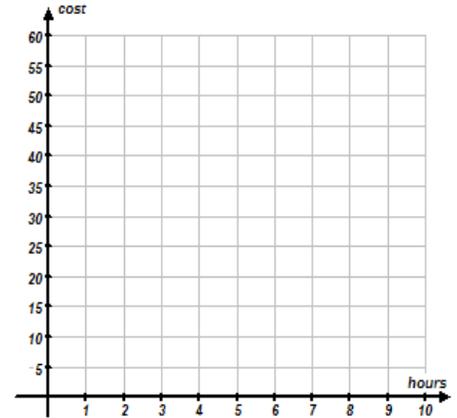. To rent a bicycle on the beach board walk, the initial cost is $10 plus an additional charge of $5 per hour. Create a linear function model and graph.

2. Let $h(x)$ be the number of person-hours it takes to assemble x engines in a factory. The company's accountant determines that the time it takes depends on start-up time and the number of engines to be completed. It takes 6.5 hours to set up the machinery to make the engines and about 5.25 hours to completely assemble one. Create the function $h(x)$.

3. Two students were selling cookies for a fundraiser. They both started on the first day of the month. The graph shows how many boxes Cindy sold in total after each day. If Veronica hadn't sold any boxes by the 3rd day of the month but then started selling cookies at the exact same rate, how many cookie boxes will Veronica have sold by the 12th day of the month?
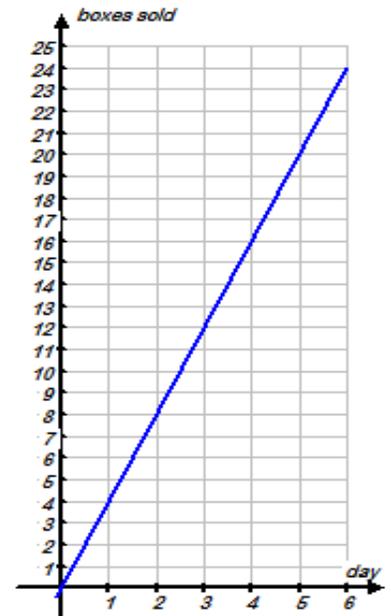
4. A babysitter charges parents $10 for coming to their house and then $6 for every hour she babysits. Create function c(x), where x = the number of hours and c(x) represents the amount the babysitter charges.

5. The function graphed shows the decibel level a car horn makes at varying distances away from the horn.
   a. At prolonged period of listening anything above 90 decibels can cause permanent ear damage. How far must you be away from the horn to prevent potential ear damage?

   b. How many decibels would the car horn be at 70 feet away?
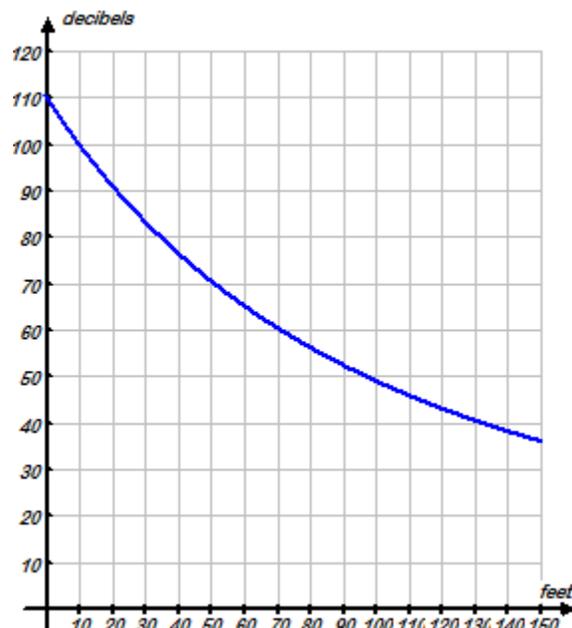
6. Bonnie is renting space at a local private school to offer math tutoring. The school charges her a monthly fee to use classrooms after school and she charges the students a flat rate per hour. She models her profit using the function: $p(x) = c \cdot x - k$.
   Explain what you think the variable x and the parameters 'c' and 'k' should each represent.

7. (Review) A pair of shoes cost $135 and has been discounted 38%. What is the sale price of the shoes?

8. (Review) A person paid their electricity bill late. The bill is $78. The electric company charges an 12% late charge. What is the total cost of the bill after paying it late?

9. If a store has marked down all of its products 20%, create a function that would represent the new cost after the discount, d(x), where x is the original price of the item before the discount.

10. If a furniture store buys furniture at wholesale cost of x and marks up the furniture by 95% to sell on their showroom floor, create a function p(x) that represents the price of the item in the store.

11. A manager at a jewelry store buys jewelry at whole sale cost of x. To set a price on the item in the store she first adds $25 and she calls this function a(x). Then, she increases by 80% and calls this combined price increase $p(a(x))$. Create a function model that expresses the overall increase in price.

12. Describe each of the following as examples of relationships that could be modeled by:
LINEAER functions, QUADRATIC functions, EXPONENTIAL functions, or NONE OF THESE.

x	0	1	2	3	4	5	....
f(x)	5	7	9	11	13	15	....

x	−1	0	1	2	3	4	....
g(x)	1	0	1	4	9	16	....

x	0	1	2	3	4	5	....
h(x)	2	3	5	9	17	33	....

x	0	1	2	3	4	5	....
t(x)	1	3	0	4	−1	5	....

x	0	1	2	3	4	5	....
w(x)	5	−1	−3	−1	5	15	....

x	0	1	2	3	4	5	....
m(x)	1	1.5	2	2.5	3	3.5	....

x	0	1	2	3	4	5	....
b(x)	1	2	4	9	35	712	....

x	0	1	2	3	4	5	....
p(x)	−4	−2	4	22	76	238	....

13. Describe each of the following as examples of relationships that could be modeled by:
    LINEAER functions, QUADRATIC functions, EXPONENTIAL functions, or NONE OF THESE.

The Sequence: $\{4, 12, 36, 108, 324, \dots\}$ The Sequence: $\{3, 9, 15, 21, 27, 33, \dots\}$